

Appendix C

Guidelines for the Protection of Potential Bat Habitat

STATE OF COLORADO

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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

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RE: Guidelines for bat mitigation at renewed mining sites in western Colorado.

Dear Ed;

Regarding our recent communications on the issue of bat mitigation at mines with bat gates undergoing renewed mining, I can offer the following comments for your use. I understand that mines that are currently gated to conserve bat roosting habitat, are potentially being re-opened for active mining operations with the recent increase in energy development in Colorado. While the best option to protect any bats using these sites, and preserve the roosting habitat that they provide, is to avoid re-entry into those features, I understand that is highly unlikely in most cases. However, any gated mine system that can be re-worked by other directions or ways that leave the system undisturbed, the best mitigation is to avoid re-entry of that feature and preserve the habitat. This would only seem possible with large mining systems that might leave portions un-disturbed. When avoidance is not possible, then the following guidelines should be considered.

1. Avoid re-entry into **winter** roosting sites (hibernacula) during the hibernation season of use. Bats are very vulnerable at this stage, and disturbance and mining activities can be both directly and indirectly deadly to bats roosting in these mines at that time. In western Colorado, where the uranium mines are located, the **winter season should be considered from October 1 – April 15**. Disturbance at winter roost sites can be greatly reduced by planning initial re-entry work around these dates. Once bats become active again, they can respond and disperse to the activity at the mine, hopefully avoiding any direct impact to individual bats.
2. Prior to re-entry into **winter/fall** roosting sites, exclusions should be conducted to help prevent the entry and use of the site by bats. This would involve screening out bats by placing chicken wire (1" mesh or more) across the entire bat gate, as well as any un-gated but open access point to the mine complex. The chicken wire should cover the gate from the top to about 5-6" from the floor or bottom of the gate. This will help prevent bats from entering the mine, and also allow any bats that may be inside the mine prior to the exclusion effort, to escape for the mine before the mining operations begin. I would suggest that exclusions begin by September 1 at these fall/winter sites. They can go up at any time prior to the start of the fall transition season, but no later than September 30, to avoid weather related variations to fall bat activity. In addition, exclusions are not functional from October 1 – April 15, because bats are not active.
3. **Summer** roosting sites, *other than at maternity roost sites*, can be handled in the same manner, with bat exclusions. I recommend that mines fitting this profile should have a chicken wire exclusion for at least 2-3 weeks prior to any re-entry of the mine. Again, the wire should cover the entire bat gate and any other un-

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gated but open access point to the mine complex. **The summer season can be considered April 15 – September 1st.**

4. **Maternity roosts** will be the most critical, as these roosting habitats are very rare. Re-entry and potential loss of these roost types will require more advanced planning. I recommend that any maternity site that cannot be avoided for re-entry, undergo an exclusion effort by April 15. The ideal situation would be to allow the exclusion effort to cover the first half of the maternity season, at least, to prevent any attempt for the colony to try and re-establish use while operations are underway. That would provide an exclusion period of April 15 – June 15th. In addition, I would suggest that after re-entry of the mine for mining, that the portal(s) be covered during night time periods, to prevent the potential of re-use at maternity sites.
5. For sites that have **bat use year round**, the target time periods for renewed mining activity should be spring or fall. This would be an April-May period, or September-October time period.

Information on what type of roosting habitat is provided at a gated site can be obtained from me, or possibly, the BLM office with jurisdiction. In summary, disturbance at hibernation sites will cause bats to awaken, burning their fat reserves before food is again available in the spring. This will potentially lead to the death of those individuals. Smoke bombs are not recommended as exclusion methods, as to the best of my knowledge, they have not been confirmed to be effective. Additionally, use of these devices during the hibernation period would more than likely kill any roosting bats, as arousal from hibernation takes too much time to avoid the hazardous nature of the smoke fumes. Exclusions will only work during seasons when bats are active.

Consideration can be given to the potential of preserving any nearby mine features to serve as possible alternate habitat for bats. This may be more important during exclusion efforts. Lastly, the creation of artificial bat habitat has been attempted in some places, and it could serve as an important tool for conservation consideration. This would only be feasible for roost sites that are considered of the highest significance for bats, including maternity roosts and large hibernacula.

I hope these "guidelines" will be useful to you in your efforts to address this issue. The Division of Wildlife thanks you for your interest in minimizing impacts to bats with renewed mining activities in western Colorado. Please feel free to contact me if you have any questions.

Sincerely,



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